

SECRET

1. A resin composition for which comprises: (1) a major absorbing polymer compound represented by the following formula (I), and (2) a cationic photopolymerization initiator.

$$\text{---} \left[\text{AX}^1 \text{AR}^1 \right] \text{---} \quad \text{(I)}$$

in the formula (I), "A" consists of the following structure:

$$\begin{array}{c} \text{---} (\text{CH}_2 \text{CH}_2 \text{O}) \text{---} \\ | \\ \text{Y} \\ | \\ (\text{CH}_2 \text{CHO}) \end{array}$$

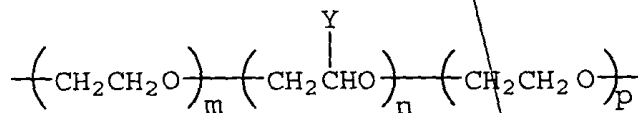
wherein the polymer chain is terminated with a manner of linkage the following structure:

$$\left(\text{CH}_2 \text{CH}_2 \text{O} \right)_m \text{---} \left(\text{CH}_2 \overset{\text{Y}}{\underset{|}{\text{CHO}}} \right)_n \text{---} (\text{CH}_2 \text{CH})$$


in the formula (I), "A" consists of:



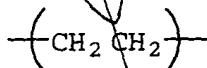
with a manner of linkage therebetween
being:



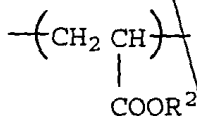
wherein m, n, and p represent integer numbers greater than or equal to 1. Additionally, a weight ratio that is calculated on the basis of each of the recurrence numbers m, n, and p is predetermined to be: $44 \times (m + p) / (\text{the molecular weight of the unit of the alkylene oxide having more than or equal to four carbon atoms}) \times n = 94/6 - 80/20$, while the weight ratio that is calculated on the basis of each of the recurrence numbers m and p, $p / (m + p)$ should be predetermined to be more than or equal to 50 percent by weight. Y represents hydrocarbon group having more than or equal to two carbon atoms. Further, X^1 represents a residue of an organic compound having two active hydrogen groups, and R^1 represents a residue of a dicarboxylic acid compound.

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2. The resin composition for ink jet recording sheet according to claim 1, wherein the cationic polymer compound (2) is a cationic polymer compound having a weight average molecular weight ranging between 1,000 and 50,000 with a linear and irregular arrangement, comprising 65 mol% to 99 mol% of an ethylene structural unit represented by the following formula (II), less than or equal to 15 mol% of an acrylate structural unit represented by the following formula (III), and 1 mol% to 35 mol% of an acrylamide structural unit represented by the following formula (IV):



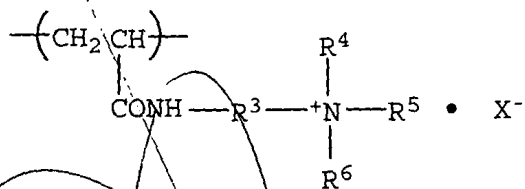
(II)



(III)

wherein R² represents an alkyl group having 1-4 carbon atoms

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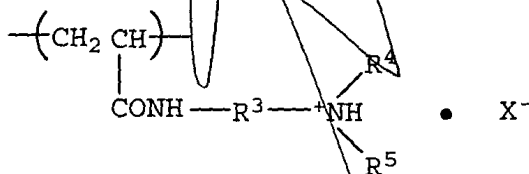


(IV)

wherein R³ represents an alkylene group having 2-8 carbon atoms; R⁴ and R⁵, respectively, represent an alkyl group having 1-4 carbon atoms; R⁶ represents an alkyl group having 1-12 carbon atoms, an aryl alkyl group having 7-12 carbon atoms, or an alicyclic alkyl group having 6-12 carbon atoms; and X⁻ represents a halogen ion, CH₃OSO₃⁻ or C₂H₅OSO₃⁻.

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3. The resin composition for ink jet recording sheet according to claim 1, wherein the cationic polymer compound (2) is a cationic polymer compound having a weight average molecular weight ranging between 1,000 and 50,000 with a linear and irregular arrangement, comprising 65 mol% to 99 mol% of an ethylene structural unit represented by the above formula (II), less than or equal to 15 mol% of an acrylate structural unit represented by the above formula (III), and 1 mol% to 35 mol% of an acrylamide structural unit represented by the following formula (V):



(V)

wherein R³ represents an alkylene group having 2-8 carbon atoms; R⁴ and R⁵, respectively, represent an alkyl group having 1-4 carbon atoms; and X⁻ represents a halogen ion, CH₃OSO₃⁻ or C₂H₅OSO₃⁻.

4. The resin composition for ink jet recording sheet according to any of claims 1 to 3, wherein mixing ratio by weight of the water-absorbing polymer compound (1) and the cationic polymer compound (2) is ranging between 50/50 and 99/1.

6. The resin composition for ink jet recording sheet according to claim 5, wherein an amount of the cationic or nonionic surface active agent (3) to be contained is from 1% by weight to 10% by weight.

7. An ink jet recording sheet comprising a substrate layer and an ink-receiving layer that is overlaid said substrate layer, wherein said ink-receiving layer comprises the resin composition according to any of claims 1 to 6.

8. A method for ink jet recording in which the ink jet recording sheet according to claim 7 is used, comprising the step of adsorbing small droplets of water-based color ink through discharging to the ink-receiving layer.

9. A method for producing an ink jet recording sheet comprising the steps of extruding a resin composition that constitutes a substrate layer into a sheet form, while extruding the resin composition for ink jet recording sheet according to any of claims 1 to 6 into a sheet form concurrently with the substrate layer, and forming layers from both of said resin compositions.

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